


# City of Alexandria, Virginia

## MEMORANDUM

**DATE:** JULY 21, 2020

**TO:** THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

**FROM:** MARK B. JINKS, CITY MANAGER 

**SUBJECT:** STATUS UPDATE – RESIDENTIAL CUT-THROUGH TRAFFIC SAFETY INITIATIVES

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A February 25, 2020 memo on Residential Cut-Through Traffic Safety from Mayor Justin M. Wilson, Vice Mayor Elizabeth Bennett-Parker and Councilman John Taylor Chapman (Attachment 1) requested that staff evaluate Fairfax County's residential permit regime and return with a proposal for a similar program in Alexandria. The purpose of this memo is to provide a status update on that effort and document other traffic mitigation initiatives.

**BACKGROUND:** The February 25 memo asked staff to return to Council (by no specific date) with a proposal for a program that would allow the City to (a) restrict turns into or out of certain residential areas and (b) impose higher speeding fines in residential areas. Council asked staff to return with deliverables including participation criteria, projections of ancillary impacts and a process for neighborhood submission. The memo also requested an implementation schedule.

**DISCUSSION:** Through community engagement and outreach associated with the Alexandria Mobility Plan (AMP) as well as feedback from the 2020 Resident Survey, staff understands that traffic congestion is a key concern in Alexandria. Although staff capacity has been limited since February 25, the City used a professional traffic engineering firm to compile research that will inform future programmatic elements (Attachment 2). The resulting white paper summarizes existing programs in similarly-sized and situated cities – including criteria and impacts, challenges and lessons learned. *A key finding is in cities that have implemented permit programs, traffic simply moved to adjacent streets which shifted congestion problems from one street to another.* Additional impacts and challenges include concerns related to equity implications of prohibiting people from driving on public streets as well as the enforcement required for the program to be successful.

**NEXT STEPS:** As FY 2021 now begins, staff is revisiting Council's request to outline a Residential Cut-Through Traffic Safety Initiative, including development of a program website. A workgroup including staff from the City Attorney's Office, Police and Finance departments are engaged and *initial findings and recommendations on process are expected this fall.* Staff will provide Council with a framework for how the City could implement a traffic mitigation program restricting turns on certain streets as well where higher fines could be implemented for speeding in residential areas. This will include criteria for eligibility, a community-driven

application process, and options for Council to receive community input on the proposal prior to consideration of whether to implement.

#### **OTHER TRAFFIC SAFETY UPDATES:**

- **Smart Mobility:** This \$40 million [program](#) is almost entirely grant-funded and will help the City better manage traffic using data and information. Recent progress includes:
  - Transit signal priority projects were completed on Duke and King streets, which will ultimately help transit move more people on these highly congested corridors
  - An Adaptive Traffic Control program began this spring which will upgrade traffic controllers citywide to enable real-time, remote signal timing changes.
  - Six (6) additional traffic cameras were installed at city intersections, for a total of 30 citywide. The cameras are viewable at [alexandriava.gov/SmartMobility](http://alexandriava.gov/SmartMobility)
- **WAZE Connected Citizens Program:** The City became a program partner this spring. In this program, the City has committed to sharing publicly available information (such as road closures for parades or festivals). This will enable WAZE to benefit residents by guiding traffic around incidents and road closures, and the City with improved incident response. WAZE aggregates data on the Waze App platform and then makes this data available to the City traffic management center via Google Cloud. With City access to this aggregated data, it will better inform future mobility projects and policies.
- **DON'T BLOCK THE BOX:** T&ES & Police have developed criteria for consistent citywide “Don’t Block the Intersection” signage which will be rolled out along with an accompanying enforcement effort. Signage will be placed at intersections where congestion is most acute during peak hours and staff expects to implement this in 2021 or when traffic returns to normal volumes.

If you have any questions or concerns about these efforts or this plan, please reach out to Hillary Orr, [Hillary.Orr@Alexandriava.gov](mailto:Hillary.Orr@Alexandriava.gov), Deputy Director for Transportation.

#### **Attachments:**

- 1- February 25, 2020 memo
- 2- Cut-Through Mitigation White Paper

Cc: Emily A. Baker, Deputy City Manager  
Debra R. Collins, Deputy City Manager  
Michael L. Brown, Chief, Alexandria Police Department  
Yon Lambert, Director, Department of Transportation & Environmental Services  
Joanna Anderson, City Attorney  
Kendel Taylor, Director, Finance  
Hillary Orr, Deputy Director/Transportation, T&ES

*City of Alexandria, Virginia*

**MEMORANDUM**

DATE: FEBRUARY 25, 2020

TO: MEMBERS OF THE CITY COUNCIL

FROM: MAYOR JUSTIN M. WILSON, VICE MAYOR ELIZABETH BENNETT-PARKER & COUNCILMAN JOHN TAYLOR CHAPMAN

SUBJECT: RESIDENTIAL CUT-THROUGH TRAFFIC SAFETY INITIATIVES

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As the City prepares to adopt amendments to our Transportation Master Plan, the community survey<sup>1</sup> conducted to inform the “Alexandria Mobility Plan” effort has yielded unsurprising results.

- 71% of the survey respondents cited congestion as one of the biggest challenges to mobility
- 35% of the survey respondents, a plurality, cited “reducing impacts of regional traffic on City streets” as a desired focus
- 53% cited reducing congestion as an area to invest resources

As part of the data collection effort of the Central Alexandria Traffic study, the City was able to quantify the true impact of cut-through traffic on some of our neighborhood streets. Specifically, the study revealed that three Alexandria streets classified as either a “Residential Collector” or a “Local” street carried greater than 40% cut-through traffic<sup>2</sup> in either one or both directions. The impact of this level of traffic on these streets is significantly negative on the quality of life of residents residing in these areas.

The City has worked to implement the short-term recommendations of the Central Alexandria Traffic Study and advance the long-term recommendations<sup>3</sup>. While those efforts will improve conditions in the corridor, it is unlikely to significantly reduce the cut-through congestion during rush-hour periods. We believe there are two immediate initiatives that can reduce the volume of cut-through traffic on uniquely impacted residential streets and increase the efficacy of enforcement efforts for existing restrictions on residential streets throughout the City.

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<sup>1</sup> [https://www.alexandriava.gov/uploadedFiles/tes/AMPAC\\_Presentation\\_2019-10-23\\_Final.pdf](https://www.alexandriava.gov/uploadedFiles/tes/AMPAC_Presentation_2019-10-23_Final.pdf)

<sup>2</sup> <https://www.alexandriava.gov/uploadedFiles/localmotion/info/gettingaround/2017-12-21%20Task%20Force%20Meeting%204%20-%20December%20Update.pdf>

<sup>3</sup> [https://www.alexandriava.gov/uploadedFiles/tes/info/Feb4CommunityMeetingSummary\(1\).pdf](https://www.alexandriava.gov/uploadedFiles/tes/info/Feb4CommunityMeetingSummary(1).pdf)

During the 2019 session, the General Assembly enacted House Bill 2033, which ultimately codified 15.2-2022-1 into the Code of Virginia<sup>4</sup>. This code section provides Fairfax County with the authority to create a residential permit regime restricting turns in or out of certain residential areas.

In lieu of requesting similar authority for the City, Senator Adam Ebbin requested that the Attorney General determine whether the City's charter provides authority to institute a similar permit regime within the City. The Attorney General's Opinion Counsel has now determined that the City does have the authority to institute such a regulatory option<sup>5</sup>.

Additionally, the 46.2-878.2<sup>6</sup> of the Code of Virginia currently allows the City to impose higher fines for speeding in residential areas. Given the risk of death or serious injury from speeding in our neighborhoods we believe these higher fines may act as an appropriate deterrent to this dangerous activity.

As such, we request that staff return to Council with:

- 1) A proposal for implementation of a program that avails the City of the authority in both areas
- 2) Clear criteria of eligibility for imposition of such restrictions/fines
- 3) Projections of any anticipated ancillary impacts of the proposed programs
- 4) A proposed schedule for implementation
- 5) Overview of process for submission by neighborhoods of eligible streets

Cc: Mark Jinks, City Manager; Yon Lambert, Director of Transportation & Environmental Services; Michael Brown, Chief of the Alexandria Police Department

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<sup>4</sup> <https://law.lis.virginia.gov/vacode/15.2-2022.1/>

<sup>5</sup> Proctor, Jan; Office of the Attorney General. "Informal Advisory Opinion"

<sup>6</sup> <https://law.lis.virginia.gov/vacode/title46.2/chapter8/section46.2-878.2/>



## TECHNICAL MEMORANDUM

To: City of Alexandria Jennifer Slesinger, Principal Planner

From: Drew Ackermann  
Daniel Solomon, AICP  
Robert B. Schiesel, P.E.

Date: May 7, 2020

Subject: Cut-Through Traffic Mitigation Research

### Introduction

Cut-through traffic, and notably cut-through traffic on neighborhood streets by regional drivers avoiding highway congestion, has become a concern across the country and in the City of Alexandria. Cut-through traffic has had numerous negative impacts on residents, including aggressive driving, air pollution, noise, and increased volumes and speeds on streets that weren't designed for them. Cut-through issues across the country appear to have been exacerbated by Waze and other navigation apps which route non-local traffic onto local streets to avoid congestion on highways or arterials.

Municipalities across the country have undertaken efforts to mitigate cut-through traffic, with strategies ranging from turn restrictions and traffic calming devices to signal modifications, roadway design changes, and highway ramp metering. This report reviews the cut-through mitigation programs of nine municipalities across the United States, including five in the Washington, DC region, highlighting their advantages, disadvantages, costs, and results, with the goal of helping Alexandria identify and implement a cut-through mitigation program that fits the needs of the City.

The following trends and key takeaways from this review are mentioned below and presented in further detail in the Summary section of the report:

- Turn restrictions can cause longer and more circuitous routes for residents, visitors, and deliveries to affected streets, except for residents who are eligible for exemption permits.
- Allowing meaningful public engagement is critical for programs being well-perceived and supported by residents.
- Technologies such as Bluetooth or StreetLight are sometimes used to identify cut-through traffic problems, but jurisdiction staff judgement and resident input are more common in identification of problems and development of solutions.
- Several jurisdictions have pivoted their initial street-specific cut-through mitigation efforts to jurisdiction-wide traffic calming after realizing that localized mitigations often simply pushed cut-through problems to other neighborhoods.
- Most cut-through programs are focused primarily on localized mitigations on certain streets, but some include more aggressive, corridor-scale measures that have resulted in substantial traffic reduction.

### Overview of Cut-Through Programs

Over a dozen cut-through mitigation programs across the country were reviewed and considered for inclusion in this report. This list was ultimately narrowed down to nine jurisdictions, six of which were selected for interviews with staff to obtain insights that weren't available in public documents. A summary and comparison of these nine jurisdictions' programs is shown in Table 1.

**Table 1: Summary of Jurisdictions**

	Fremont, CA	Manhattan Beach, CA	Bellevue, WA	West Palm Beach, FL	Chevy Chase, MD	Falls Church, VA	Fairfax County, VA	Stafford County, VA	Rockville, MD
	NATIONAL CASE STUDIES				LOCAL CASE STUDIES				
<b>Interviewed for report</b>	✓	✓			✓	✓	✓		✓
<b>Program elements</b>									
Highway ramp metering	✓						✓		
Turn restrictions	✓	✓	✓	✓	✓	✓	✓	✓	✓
Traffic calming		✓	✓	✓				✓	✓
Resident exemption permits						✓	✓		
Traffic signal adjustments	✓	✓							
Use of StreetLight technology <sup>1</sup>	✓								
Use of Bluetooth technology <sup>2</sup>		✓							
Partnership with navigation apps	✓								

## National Case Studies

### Fremont, California

*Note: An interview with Fremont staff was conducted for this section.*

Fremont's traffic congestion program is aimed at mitigating the "Fremont funnel effect", which results from a jobs-housing imbalance between Silicon Valley (to Fremont's south/southwest) and the Tri-Valley, Contra Costa County, and Central Valley areas (to Fremont's east/northeast), leaving Fremont in the middle of traffic demand paths.

Many of Fremont's cut-through problems center on Mission Boulevard, an arterial running parallel to Interstate 680. This roadway has long been known by locals as a freeway alternative, but only with the recent advent of Waze and other navigation apps has Mission Boulevard and its connecting residential streets been burdened with substantial cut-through traffic not originating or ending in Fremont.

In response to increased complaints from residents about app-driven cut-through traffic, the City of Fremont began implementing mitigation measures in 2016. These measures include:

- Activating freeway on-ramp meters the California Department of Transportation (Caltrans) had already installed on I-680, which remove an incentive for through-traffic to divert to side streets by keeping the Interstate running more smoothly;
- New stop signs on Paseo Padre Parkway, a popular cut-through route running parallel to I-680;

<sup>1</sup> StreetLight Data is an interactive transportation data platform that provides access to Big Data resources and processing software, including customizable traffic analysis between user-selected zones. This can help differentiate between local and non-local (cut-through) traffic in given neighborhoods or streets, providing guidance on where cut-through mitigations may be desired.

<sup>2</sup> Bluetooth is a wireless technology standard used to exchange data between fixed and mobile devices. The recent inclusion of Bluetooth capability in both vehicles and mobile devices allows analysis of real-time travel data.

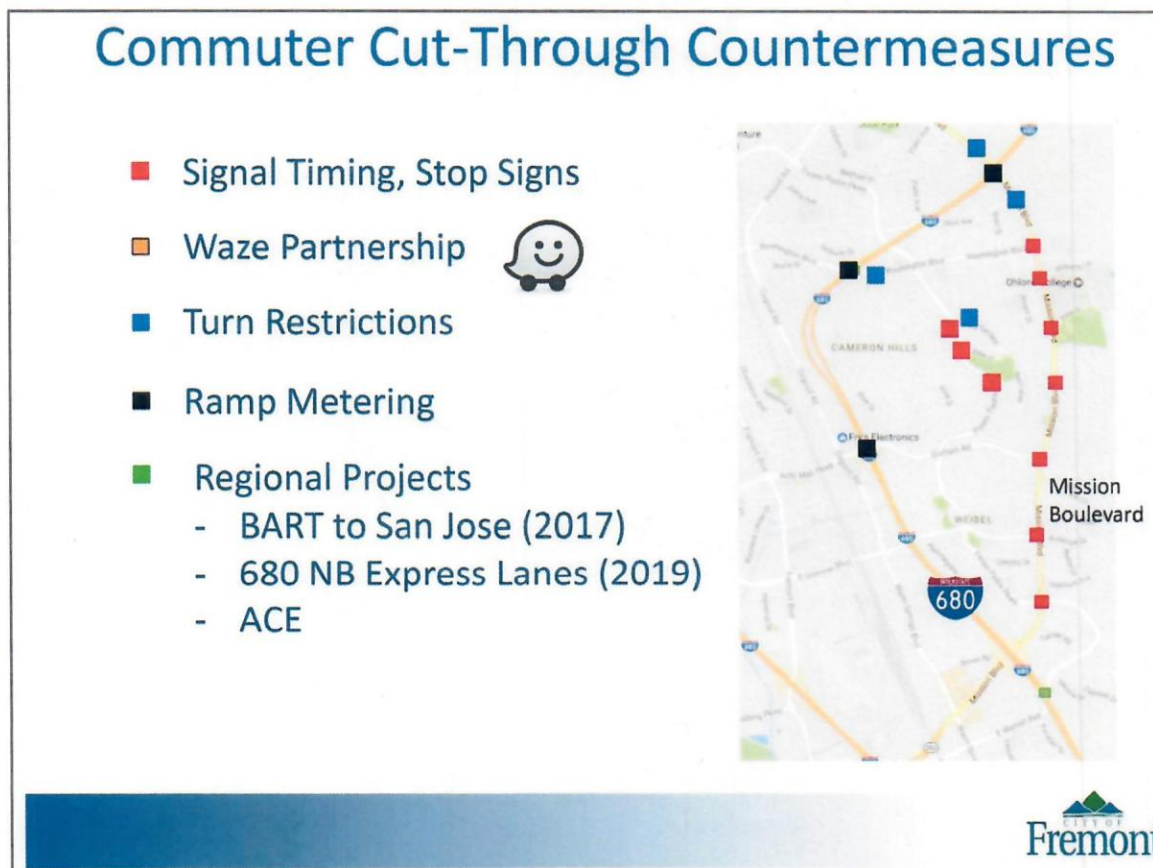


- Participation in Waze's Connected Citizens Program, an information exchange system between Waze and city governments;
- The Neighborhood Cut-Through Traffic Relief Project, administered by Fremont's Public Works and Police Departments, which includes peak-hour turn restrictions in four neighborhoods that have been severely impacted by cut-through traffic; and
- A new signal timing strategy on Mission Boulevard which adds delay at intersections, eliminating the benefits of using it as a cut-through route.

Fremont used StreetLight technology to identify the areas most affected by cut-through traffic, but didn't rely heavily on Bluetooth data.

Fremont participated in Waze's Connected Citizens Program, but found the program had limited efficacy in curtailing cut-through traffic. Rather, navigation apps' algorithms only stopped routing drivers to residential streets when city-initiated restrictions and signal modifications went into effect.

A map provided by the City of Fremont showing its cut-through countermeasures is shown in Figure 1.



**Figure 1: Fremont Commuter Cut-Through Countermeasures**

Because these programs are not items in Fremont's Capital Improvement Program (CIP), their distinct costs are difficult to differentiate. Initial implementation of the signal timing, stops signs, and turn restrictions required a significant amount of City staff time, but capital costs were low as they generally only included new signs. (The ramp meters were already installed by Caltrans.)

The cut-through mitigations have affected Fremont residents and businesses differently, so community reactions have predictably been varied. For example, residents and businesses along Mission Boulevard now have longer travel times as the signals and turn restrictions apply to all motorists, local or non-local. Similarly, while cut-through relief has arrived for some residential streets along Mission Boulevard, those residential streets which were not previously impacted by cut-through now have longer travel times than before, since every street connecting to Mission Boulevard is affected by the changes. Some residents who weren't previously impacted have wanted Mission Boulevard to return to its previous state.

While Fremont did not set any specific targets to measure the projects' success, it has seen substantial localized results, including a 33% drop in traffic congestion on Mission Boulevard and a 70%-90% drop in cut-through traffic in neighborhoods where turn restrictions were implemented. The City found that after the Mission Boulevard adjustments, cut-through drivers who relied more on app-based navigation than on memory or habit did not return to Mission Boulevard once the apps stopped routing them there.

However, the City also found that some cut-through traffic simply rerouted to other local streets as the navigation apps adjusted their algorithms. Rather than pursuing similar localized mitigations elsewhere and pushing the problem from neighborhood to neighborhood, Fremont has since shifted its focus toward addressing the underlying regional issues that cause cut-through and other traffic congestion, like the Bay Area's housing imbalance and its need for more robust multimodal transportation options.

The City of Fremont is also pursuing a coalition with other Bay Area jurisdictions to advocate for state regulations preventing navigation apps from routing non-local trips onto local residential streets.

## Manhattan Beach, California

*Note: An interview with Manhattan Beach staff was conducted for this section.*

The City of Manhattan Beach administers the Neighborhood Traffic Management Program (NTMP), whose goal is improving the safety and livability of neighborhood streets by assisting residents in addressing local traffic concerns. The NTMP has been in place since 2002.

The City has published a NTMP Handbook outlining both the process by which residents obtain consideration for traffic control measures, and a list of traffic control tools the City implements. These tools are categorized by level, with higher levels being costlier, more complex to implement, and more restrictive on vehicular movement. A list of tools is shown on Table 2.

**Table 2: Manhattan Beach Traffic Control Tools**

Level One tools	Level Two tools	Level Three tools
Enhanced police enforcement	Traffic signal adjustments to discourage cut-through traffic	Raised crosswalks
Speed monitoring trailers	Turn restrictions via signage	Raised intersections
Neighborhood Traffic Watch Program	Rumble strips/dots	Traffic circles
Higher visibility crosswalks	Raised median island	Restricted movement barriers
Pedestrian crossing signs	Entry island (neighborhood identification island)	Entrance barrier/half closures
Electronic speed limit signs/larger static speed limit signs	Mid-block narrowing	Diagonal diverters
	Chokers at intersections	
	Lane reduction/lane narrowing (restriping)	
	Stop signs as traffic control measures	
	Parking restrictions	



The Handbook includes a detailed description of each tool including its advantages, disadvantages, cost, problems it's meant to target, and criteria for implementation. More detailed information about implementation criteria can be found in Section B of the Appendix.

Manhattan Beach has implemented the NTMP in the form of neighborhood studies for various areas within the City. Study areas have included entire neighborhoods or clusters of neighborhoods, as well as a study for each public school in the City. Neighborhood studies are initiated by a written request from residents, after which City staff determine whether the request should be handled as part of normal traffic engineering or police functions, or if it qualifies for consideration as a NTMP project.

Once a NTMP project is established, the City takes an iterative approach, first implementing Level One tools and following up with Level Two tools only if City staff deem it necessary. As of 2020, the City has not advanced any NTMP project to Level Three tools. There are no quantifiable measures used to determine either an installation's success or need for further action. Rather, City staff use professional judgment to make that determination.

Recent technologies like Bluetooth data are generally not used for NTMP projects, but have been used for traffic flow studies on arterials, which the City tries to optimize to discourage cut-through traffic on residential streets.

The cost of the program varies year to year depending on how many studies the City is undertaking, but is generally low as signs and striping are already included in the City's public works budget for general maintenance.

The City has found the NTMP beneficial as it provides an orderly framework to concentrate traffic calming efforts, both as planned projects and as responses to residents' traffic concerns. The NTMP also emphasizes residents' ability to take ownership and provide input on plans, which has resulted in generally positive feedback.

However, the program is not without drawbacks. Since installations often include new signs, the City has received complaints from residents if a sign is placed directly in front of their property. The City has also found that cut-through mitigation measures sometimes create new traffic problems elsewhere.

### **Bellevue, Washington**

In response to resident complaints about cut-through traffic on a particular road in Bellevue's Woodridge neighborhood, the City of Bellevue installed an all-way stop and crosswalk, "residential area" signs at all entrances to the Woodridge neighborhood, and implemented afternoon peak hour turn restriction signs along 128<sup>th</sup> Avenue SE, a local street which was being used as an alternative to nearby Richards Road, a major arterial.

The turn restrictions resulted in a 75-80% reduction in left-turning vehicles from 128<sup>th</sup> Avenue SE to SE 32<sup>nd</sup> Street, which was the direction of cut-through traffic the restrictions were meant to target. Routing apps stopped directing drivers through the area as a result of the turn restrictions, and evening and daily traffic volumes decreased on most streets in the Woodridge neighborhood. It should be noted, however, that this result may not apply universally. The Woodridge neighborhood has relatively few access points from the outside, making targeted turn restrictions more effective at determining overall neighborhood traffic volumes, especially if a large portion of neighborhood traffic is cut-through.

The program was funded by the City of Bellevue's Neighborhood Traffic Safety Program with a budget of \$25,000. The Neighborhood Traffic Safety Program is an arm of the City's Transportation Department specifically tasked with mitigating unwanted parking and traffic problems. The program's cut-through mitigation and traffic calming measures include chicanes/slow points, full street closures (except for pedestrians, cyclists, and emergency vehicles), partial (one-way) street closures, neighborhood entrance islands, and other tools. Implementation criteria for these programs can be found in Section C of the Appendix.

### **West Palm Beach, Florida**

The City of West Palm Beach's first traffic calming program was implemented in 1994 to address speeding, collisions, and cut-through traffic. It contained an elaborate evaluation, planning, and implementation process that burdened City staff and proved successful only in more affluent neighborhoods with established community organizations.



In 1996, the City adjusted its approach to traffic calming, creating Transportation Planner staff positions and keeping policies nonprescriptive, giving staff flexibility to use professional judgement in deciding which measures to implement.

The City's traffic calming program includes the following measures:

- Traffic circles;
- Chokers/chicanes; and
- Speed bumps.

While many of the City's traffic calming measures have the effect of reducing cut-through traffic, the City does not consider measures specifically designed to reduce cut-through (like diverters or turn restrictions) to inherently serve the goal of traffic calming. This is because cut-through measures can simply divert speeding and increased traffic volumes onto other streets, as well as lengthen vehicle trips and impede emergency access. In fact, the City discourages the use of route modifications, instead focusing on the goal of maintaining interconnected access, but with street designs citywide that mitigate the negative effects motor vehicles have on safety and livability.

## Local Case Studies

### Chevy Chase, Maryland

*Note: An interview with Chevy Chase staff was conducted for this section.*

The Town of Chevy Chase conducted a town-wide traffic assessment in 2002, which resulted in a traffic calming plan designed to limit cut-through traffic and reduce vehicle speeds. The resulting traffic restrictions, shown on the graphic below, have been unchanged since they went into effect following the 2002 traffic assessment.

After the initial study and installation of restriction signs, the Town's only costs for the program have been police enforcement of the restrictions. The Town did not use Bluetooth or other recently developed technologies in implementing the program.

Like other cut-through mitigation programs, the Town faces the trade-off of residents having to navigate turn restrictions in their own neighborhoods in exchange for less cut-through traffic.

A new town-wide traffic study is currently being developed that captures recent changes in Chevy Chase, including increased development in nearby Bethesda and construction of the Purple Line light rail line.

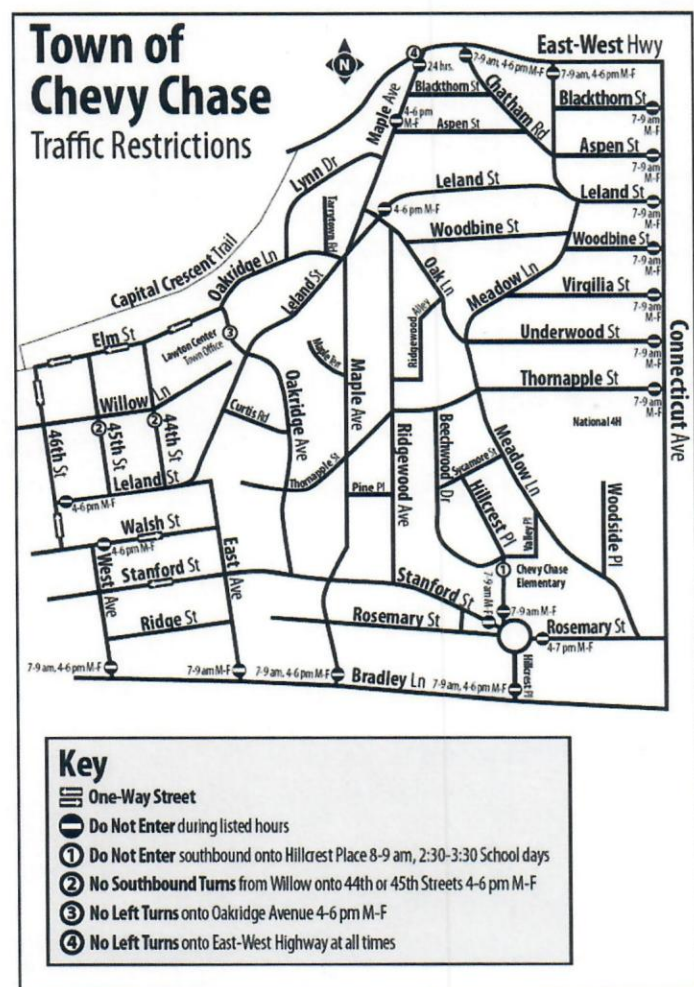


Figure 2: Chevy Chase Traffic Restrictions



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## **Falls Church, Virginia**

*Note: An interview with Falls Church staff was conducted for this section.*

The City of Falls Church has implemented peak hour access restrictions on three residential streets to combat cut-through traffic. The streets, located in the area between Hillwood Avenue and Broad Street, were chosen based on both resident complaints and traffic issues known to City staff.

Residents of these and certain adjacent streets are eligible for permits exempting them from the restrictions. Permit placards are not displayed on windshields but kept inside the vehicle for the driver to produce if asked. Enforcement is demand-driven and based on resident requests.

Falls Church does not currently intend to add more access restrictions to streets, but is instead focused on its Neighborhood Traffic Calming Program which seeks to reduce vehicle speeds and volumes citywide rather than targeting cut-through traffic specifically. The Neighborhood Traffic Calming Program began in 2005 and has since been updated twice to improve its efficiency and effectiveness. Residents initiate traffic calming projects by contacting the City, which then determines whether the issue can be handled administratively or if a more involved process is required. If the latter is true, the initiating resident distributes a petition to confirm community support. If 51% of study area residents sign the petition, the City asks for working group volunteers and collects traffic and other site-related data. Finally, the City assigns a priority level to the case and determines whether it can be addressed with light solutions like signage or heavy solutions like speed humps or curb extensions.

## **Fairfax County, Virginia**

*Note: An interview with Fairfax County staff was conducted for this section.*

The Fairfax County Department of Transportation (FCDOT) administers the Residential Traffic Administration Program (RTAP), which encompasses cut-through mitigation among other goals. The cut-through element of the RTAP includes access restrictions, turn prohibitions, and traffic calming devices such as speed humps, raised crosswalks, speed tables, raised medians, and chokers. The program is based off VDOT's 1996 Cut-Through Policy.

For cut-through mitigations to proceed, the road in question must be of a certain type and speed limit, have a certain number of cut-through trips, and have a reasonable alternate route nearby. More detailed information about implementation criteria can be found in Section D of the Appendix. City consideration of a street is a resident-driven process and includes extensive coordination between community residents, FCDOT, and VDOT, and requires various approvals and/or ballot votes from these entities.

There are currently three cut-through restrictions in place in two districts within Fairfax County. One was established recently, while the other two have been in place since the 1990's. The limited number is due at least partly to the onerous process, which requires 150 trips in each direction, 75 percent of neighbors to support the mitigation, and VDOT to approve the measure based on their analysis of how it would impact local traffic. Staff note that one of the mitigations implemented in the 1990's that involved right in right outs, raised medians and diversions is seen by many residents as overly controlled, as residents are subject to the same restrictions.

In 2019, the Virginia General Assembly passed an ordinance allowing Fairfax County residents of an area with cut-through restrictions to apply for a permit exempting them from the restrictions. FCDOT is currently identifying funding to develop software to administer the program.

Enforcement of cut-through restrictions, including fraudulent use of the permit stickers once the program is implemented, is to be performed by the Fairfax County Police Department. Staff noted that some amount of peak hour enforcement restrictions is necessary with the existing program, but is often difficult to get.

## **Stafford County, Virginia**

Stafford County's Residential Traffic Management Plan (RTMP) provides citizens and communities with tools to address traffic problems such as volume, speed, and cut-through traffic. The RTMP's Residential Cut-Through Traffic program is specifically tasked with mitigating cut-through through use of the following measures:



- Passive controls, including turn prohibitions and one-way streets; and
- Physical controls, including diverters, forced turn channelization, traffic circles, and other traffic calming/diversion elements.

In order for to qualify for the Residential Cut-Through Traffic program, the road in question must be of a certain type and speed limit, have a certain number of cut-through trips, have a certain number of homes per linear feet, not serve as primary commercial or industrial access, and have a signed petition of a minimum of 75% of residents.

### **Rockville, Maryland**

*Note: An interview with City of Rockville staff was conducted for this section.*

The City of Rockville has published its Guidelines for Neighborhood Traffic Management, whose goal is to maintain livable residential neighborhoods by diverting or otherwise altering traffic flow through neighborhoods and calming traffic through reduced speed.

Rockville's neighborhood traffic management strategies include:

- Passive controls (signs), including turn prohibitions, one-way signs, increased moving violation fines, and others; and
- Physical controls, including diagonal diverters, traffic circles, chicanes, and other traffic calming elements.

Rockville has two categories for traffic management strategies: residential traffic diversion plans and residential speed control plans. The eligibility criteria for both categories are presented in Section E of the Appendix.

The program is mostly funded through Capital Improvements Program (CIP) funds, but it is sometimes necessary to request additional funds. Costs vary widely depending on which strategies are used, with signs and pavement markings costing several hundred dollars, and roadway/intersection reconfigurations costing several hundred thousand dollars.

Traffic diversion or speed control plans are generally left in place for two years after implementation, after which the City can reevaluate or review if changes are necessary. To monitor the success of the program, the City collects traffic data year-round to compare conditions before and after implementation. The City has generally found the program successful in meeting its goals, but in cases where it does not meet goals, it recommends more items from the passive controls and physical controls strategies listed above.

Rockville residents can submit concerns about excessive speeds or volumes on neighborhood streets online directly to City staff, or through involvement with the Rockville Pedestrian Advocacy Committee (RPAC), Rockville Bicycle Advisory Committee (RBAC), or other local associations that are open to the public.

The City has received both positive and negative feedback on the program from residents, but staff noted the importance of citizen involvement in traffic diversion and speed control plans since they are the end users.

### **Summary**

This report has presented cut-through and traffic calming programs of various sizes and scopes across the country. Some are specifically dedicated to mitigating cut-through while for others, cut-through mitigation is one of many goals of a broader traffic calming program.

Despite the diversity of program types and scopes, several trends appear to apply broadly based on interviews with jurisdiction staff, and can offer guidance to the City of Alexandria.

- Turn restrictions can cause longer and more circuitous routes for residents, visitors, and deliveries to affected streets, except for residents who are eligible for exemption permits. Whether turn restrictions lead to increased traffic on adjacent streets likely depends on how porous and connected the neighborhood's street pattern is with the surrounding area, with more interconnected street layouts offering more alternate cut-through routes if one is restricted. The success



of Bellevue, Washington's turn restrictions in reducing traffic on adjacent streets was likely due to the how few access points existed between the neighborhood and the surrounding area.

- Allowing meaningful public engagement is critical for programs being well-perceived and supported by residents. For many programs reviewed for this report, it is residents who initiate contact with the jurisdiction to ask for cut-through or traffic calming measures. Jurisdiction staff who were interviewed also noted that involving residents not only at the outset, but throughout the process engendered a sense of community ownership and support for the programs.
- Technologies such as Bluetooth or StreetLight were used in some jurisdictions to identify and monitor cut-through traffic patterns but in most cases, problem areas were identified by residents, confirmed by staff, and mitigations proposed based on staff observations and judgement.
- Several jurisdictions reviewed for this report have pivoted their initial street-specific cut-through mitigation efforts to jurisdiction-wide traffic calming and/or broader regional efforts after realizing that localized mitigations often simply pushed cut-through problems to other neighborhoods.
- Compared with other jurisdictions reviewed for this report, Fremont, California's program includes more aggressive measures aimed at altering traffic patterns along an entire corridor as opposed to localized mitigations on certain streets. Modifying signal timing to disincentivize through traffic on a major arterial (Mission Boulevard) came with increased travel times for many residents and businesses, but yielded a substantial impact in effectively removing the corridor as a regional through-route recognized by routing apps. Fremont offers a unique and useful example if Alexandria is interested in pursuing this type of corridor-scale approach.

**APPENDIX**

**CUT-THROUGH TRAFFIC  
MITIGATION RESEARCH**

**CITY OF ALEXANDRIA, VIRGINIA**

**May 7, 2020**

**GOROVE SLADE**  
Transportation Planners and Engineers



## **Contents**

**(Note: Click on heading to navigate directly to each section of the appendix)**

A: Research Sources

B: Tool Implementation Criteria – Manhattan Beach, California

C: Tool Implementation Criteria – Bellevue, Washington

D: Tool Implementation Criteria – Fairfax County, Virginia

E: Tool Implementation Criteria – Stafford County, Virginia

F: Tool Implementation Criteria – Rockville, Maryland

## A: RESEARCH SOURCES



## Research Sources

Information presented in this report about jurisdictions' programs was sourced from a combination of jurisdiction websites, technical papers, and interviews with jurisdiction staff. These sources are presented below.

- Fremont, California
  - <http://www.fremont.gov/2818/Traffic-Congestion>
  - Phone interview with Noe Veloso, Assistant City Engineer, City of Fremont
- Manhattan Beach, California
  - <https://www.citymb.info/home/showdocument?id=4648>
  - Phone interview with Erik Zandvliet, City Traffic Engineer, City of Manhattan Beach
- Bellevue, Washington
  - <https://bellevuewa.gov/city-government/departments/transportation/projects/neighborhood-projects/woodridge-traffic>
  - [https://bellevuewa.gov/sites/default/files/media/pdf\\_document/Guidebook\\_Web.pdf](https://bellevuewa.gov/sites/default/files/media/pdf_document/Guidebook_Web.pdf)
- West Palm Beach, Florida
  - [http://onlinepubs.trb.org/onlinepubs/circulars/ec019/Ec019\\_i5.pdf](http://onlinepubs.trb.org/onlinepubs/circulars/ec019/Ec019_i5.pdf)
- Chevy Chase, Maryland
  - <https://townofchevyCHASE.org/DocumentCenter/View/2940/TOCC-Traffic-Study-Request-for-Proposal-July-2019>
  - Phone interview with Todd Hoffman, Town Manager, Town of Chevy Chase
- Falls Church, Virginia
  - <https://www.fallschurchva.gov/358/Drive-Through-Permit>
  - Phone interview with Zak Bradley, PE, CFM, Transportation Engineer, City of Falls Church
- Fairfax County, Virginia
  - <https://www.fairfaxcounty.gov/transportation/residential-traffic-administration>
  - Phone interview with Steven Knudsen, Transportation Planner III, Fairfax County
- Stafford County, Virginia
  - <https://staffordcountyva.gov/DocumentCenter/View/5383/Residential-Traffic-Management-Plan>
- Rockville, Maryland
  - <https://www.rockvillemd.gov/DocumentCenter/View/585/guidelines?bidId=>
  - Email correspondence with Jennifer Wang, Senior Transportation Engineer, City of Rockville

## **B: TOOL IMPLEMENTATION CRITERIA – MANHATTAN BEACH, CALIFORNIA**



## Cut-through and/or Traffic Calming Tool Implementation Criteria – Manhattan Beach, California

Source: Neighborhood Traffic Management Program (NTMP), City of Manhattan Beach

*Note: Tools without implementation criteria are not included.*

Tool	Criteria
Neighborhood Traffic Watch Program	Requires willing participants/volunteers
Higher visibility crosswalks	Use at existing crosswalk location Near area of high pedestrian use
Pedestrian crossing signs	Use at existing crosswalk location Near area of high pedestrian use
Electronic speed limit signs/larger static speed limit signs	Placement depends on conditions not readily apparent to driver such as topography, vegetation, etc.
Traffic signal adjustments to discourage cut-through traffic	Must have identified cut-through traffic Must have traffic signal adjacent to residential neighborhood
Turn restrictions via signage	Must have identified cut-through traffic
Raised median island	Must not significantly impede emergency vehicle access Must meet drainage requirements > 15% of peak hour volume is cut-through traffic Critical Speed is >7 mph over peak posted speed Grade is less than 10%
Entry island (neighborhood identification island)	Must not significantly impede emergency vehicle access Must meet drainage requirements
Mid-block narrowing	Must not significantly impede emergency vehicle access
Chokers at intersections	There must be adequate turning radius for emergency vehicle access, especially in narrow streets
Lane reduction/lane narrowing (restriping)	Must not create significant parking impact due to loss of parking
Stop signs as traffic control measures	Requires review by City Traffic Engineer and City Council approval
Parking restrictions	Parking study required to determine extent of parking demand
Raised crosswalks	Must meet drainage requirements Must not significantly impede emergency vehicle access At least 25 pedestrians should cross during peak hours Near pedestrian generator Should be used in conjunction with other traffic calming devices to control speeds

Tool	Criteria
Raised intersections	<p>Must meet drainage requirements</p> <p>Must not significantly impede emergency vehicle access</p> <p>At least 25 pedestrians crossing during peak hour</p> <p>Near pedestrian generator</p>
Traffic circles	<p>Intersecting roadways must be of sufficient width</p> <p>Loss of parking must be assessed</p> <p>Volume should be between 500 to 5,000 ADT</p> <p>Critical speed should be at least 7 mph over posted speed</p> <p>Must meet diversion chart criteria</p> <p>Grade should be less than 10%</p> <p>Should be used in series or in conjunction with other traffic calming devices</p> <p>May require extensive signing</p> <p>May require educational campaign and learning period</p> <p>Must not significantly impede emergency vehicle access</p>
Restricted movement barriers	<p>Must meet drainage requirements</p> <p>Must not significantly impede emergency vehicle access</p> <p>Must meet diversion curve criteria</p>
Entrance barrier/half closures	<p>Must not significantly impede emergency vehicle access</p> <p>Alternate access to residential area must be considered</p> <p>Must meet drainage requirements</p> <p>Meet diversion curve criteria</p>
Diagonal diverters	<p>If full diverter, cannot be on truck or transit route</p> <p>Must not significantly impede emergency vehicle access</p> <p>Must meet diversion curve criteria</p>



## C: TOOL IMPLEMENTATION CRITERIA – BELLEVUE, WASHINGTON

## Cut-through and/or Traffic Calming Tool Implementation Criteria – Bellevue, Washington

Source: Residential Traffic Guidebook, City of Bellevue

*Note: Only tools relevant to cut-through traffic or traffic calming are included.*

Tool	Approval requirements	Traffic considerations
Chicanes/slow points	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Vehicle speeds of >35 mph (>30 mph if adjacent to neighborhood park/school) Average daily traffic of 300-3500 vehicles Moderate impact to emergency response
Curb extensions	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Average daily traffic of 300-6500 vehicles Moderate impact to emergency response On-street parking may need to be restricted
Full closure	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Average daily traffic >300 vehicles During peak 2-hour period, 30% of one-direction peak-period volume should be cut-through with at least 30 total vehicles cutting through Significant impact to emergency response
Lane striping	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Average daily traffic >300 vehicles Parking may be restricted
Medians	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Vehicle speeds >35 mph (>30 mph if adjacent to neighborhood park/school) Average daily traffic >300 vehicles Limited impact to emergency response vehicles, depending on location Should not be located where they affect driveway access Parking may be restricted
Neighborhood entrances	Adjacent property support 65% of community ballot support if neighborhood-wide	Average daily traffic >300 vehicles Parking may be restricted



Tool	Approval requirements	Traffic considerations
Partial closure	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Average daily traffic >300 vehicles During peak 2-hour period, 30% of one-direction peak-period volume should be cut-through with at least 30 total vehicles cutting through Significant impact to emergency response May restrict parking
Raised crosswalk	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Average daily traffic of 300-3500 vehicles Significant impact to emergency response vehicles Should not be located where they affect driveway access Potential noise impacts from motorists traversing the raised crosswalk
"Residential area" signs	Adjacent property support may be needed	Posted speed limit of 25 mph
Speed cushions	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Vehicle speeds >35 mph (>30 mph if adjacent to neighborhood park/school) Average daily traffic of 300-3500 vehicles Moderate impact to emergency response vehicles Should not be located where they affect driveway access Potential noise impacts from motorists traversing the speed cushion
Speed dots	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Vehicle speeds >35 mph (>30 mph if adjacent to neighborhood park/school) Average daily traffic of 300-3500 vehicles Moderate impact to emergency response vehicles Should not be located where they affect driveway access May restrict parking May require removal of some landscaping in the right-of-way of adjacent yards

Tool	Approval requirements	Traffic considerations
Speed humps	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Vehicle speeds >35 mph (>30 mph if adjacent to neighborhood park/school) Average daily traffic of 300-3500 vehicles Significant impact to emergency response vehicles School bus or transit route Potential noise impacts from motorists traversing the speed hump
Speed limit pavement markings	Residents are notified when installed	Posted speed limit of 25 mph Vehicle speeds >30 mph
Speed mounds	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Vehicle speeds >35 mph (>30 mph if adjacent to neighborhood park/school) Average daily traffic of 300-3500 vehicles Moderate impact to emergency response vehicles School bus or transit route
Split speed humps	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Vehicle speeds >35 mph (>30 mph if adjacent to neighborhood park/school) Average daily traffic of 300-3500 vehicles Moderate impact to emergency response vehicles School bus or transit route Potential noise impacts from motorists traversing the split speed humps
Stationary radar sign	Adjacent property support 65% of community ballot support if neighborhood-wide	Score based on predetermined criteria Should be placed where on-street parking is minimal
Traffic circles	Adjacent property support 65% of community ballot support if neighborhood-wide	Posted speed limit of 25 mph Vehicle speeds >35 mph (>30 mph if adjacent to neighborhood park/school) Average daily traffic of 300-3500 vehicles Significant impact to emergency response vehicles School bus or transit route May require parking restrictions



## D: TOOL IMPLEMENTATION CRITERIA – FAIRFAX COUNTY, VIRGINIA

## Cut-through and/or Traffic Calming Tool Implementation Criteria – Fairfax County, Virginia

Source: Residential Traffic Administration Program (RTAP), Fairfax County

Tool	Criteria
Traffic calming (speed humps, speed tables, pavement markings)	<p>Local, residential collector or residential minor arterial road with a 25 mph speed limit.</p> <p>The road must have 500 to 6,000 vehicles per day.</p> <p>85<sup>th</sup> percentile speed of vehicles at least 10 mph over the posted limit.</p>
Cut-through mitigation (access restrictions, route modifications)	<p>The road must be a local residential street with a 25 mph speed limit</p> <p>A minimum of 150 cut-through trips in one hour in one direction and 40% or more of the total one hour, single direction volume must be cut-through traffic.</p>
"\$200 Additional Fine for Speeding" signs	<p>The road must be a local road, a collector road, or a minor arterial with a speed limit of 35 mph or less.</p> <p>The road must have at least 600 vehicles per day.</p> <p>The 85<sup>th</sup> percentile speed of vehicles is at least 10 mph over the speed limit.</p>
"Watch for Children" signs	<p>Eligible locations are limited to community entrances, playgrounds, daycare or community centers, and other areas of concern.</p>
Through-truck restriction	<p>The road must be either:</p> <ul style="list-style-type: none"><li>• A local or collector road in a residential neighborhood</li><li>• A minor arterial or primary road with at least 12 dwellings per 1000 feet of roadway</li></ul> <p>A safety concern indicates a need for the prohibition.</p>



## E: TOOL IMPLEMENTATION CRITERIA – STAFFORD COUNTY, VIRGINIA

## Cut-through and/or Traffic Calming Tool Implementation Criteria – Stafford County, Virginia

Source: Residential Traffic Management Plan, Stafford County

Tool	Criteria
"Residence District - Additional \$200 Fine" sign	<p>Meet the definition of a residential local, collector, or minor arterial road as defined.</p> <p>Have a posted speed limit of 35 MPH or less.</p> <p>Documented volume equal to or greater than 600 vehicles per day.</p> <p>A documented speeding problem where the 85<sup>th</sup> percentile speed of vehicles is equal to or greater than 10 mph over the posted speed limit, or where the average speed is at least 5 mph over the posted speed limit.</p> <p>A petition that supports the increased fines, signed by a minimum of 51% of the property owners/residents within the impacted area.</p>
<p>Residential cut-through traffic mitigations:</p> <ul style="list-style-type: none"> <li>• Passive controls including turn prohibition signs and one-way street signs</li> <li>• Physical controls including diagonal diverter, intersection cul-de-sacs, mid-block cul-de-sacs, semi-diverters, forced turn channelization, median barriers, traffic circles, speed humps</li> </ul>	<p>Meet the definition of a local residential street as defined.</p> <p>Have a posted speed limit of 25 mph.</p> <p>Cut-through traffic is 40% or more of the total one hour, single direction volume</p> <p>Minimum of 150 cut-through trips during one hour in a single direction.</p> <p>A petition that supports the cut-through traffic restriction, signed by a minimum of 75% of the property owners/residents within the impacted area</p> <p>Collector roads must also have a minimum of 12 homes fronting on both sides per 1,000 linear feet of roadway, and may not serve as primary access to commercial or industrial areas.</p>
Through-truck restrictions	<p>Meet the definition of a local residential street as defined.</p> <p>Reasonable alternate route is available; to be considered "reasonable", the alternate route must be sufficient and appropriate for truck traffic, and must have a terminus identical to the existing route.</p>



Tool	Criteria
<p>Traffic calming:</p> <ul style="list-style-type: none"> <li>• Community awareness and education</li> <li>• Enforcement</li> <li>• Non-physical measures (narrowing pavement marking)</li> <li>• Physical measures (speed bumps, traffic circles, chokers)</li> </ul>	<p>Meet the definition of a local residential street as defined.</p> <p>Have a posted speed limit of 25 mph.</p> <p>Documented volume of 600 – 4,000 vehicles per day (physical measures only).</p> <p>A documented speeding problem where the 85<sup>th</sup> percentile speed of vehicles is equal to or greater than 10 mph over the posted speed limit, or where the average speed is at least 5 mph over the posted speed limit.</p> <p>A petition that supports the traffic calming measures, signed by a minimum of 75% of the property owners/residents within the impacted area.</p> <p>VDOT will review, evaluate, and respond to requests for exceptions to the established criteria.</p> <p>Collector roads must also have a minimum of 12 homes fronting on both sides per 1,000 linear feet of roadway, and may not serve as primary access to commercial or industrial areas.</p> <p>Less than 600 vehicles per day:</p> <ul style="list-style-type: none"> <li>• Education</li> <li>• Enforcement</li> <li>• Non-physical measures</li> </ul> <p>600 - 4,000 vehicles per day:</p> <ul style="list-style-type: none"> <li>• Education</li> <li>• Enforcement</li> <li>• Non-physical measures</li> <li>• Physical Measures</li> </ul> <p>Greater than 4,000 vehicles per day:</p> <ul style="list-style-type: none"> <li>• Education</li> <li>• Enforcement</li> <li>• Alternative actions only</li> </ul>

Tool	Criteria
<p>"Watch for Children" sign</p>	<p>Within a subdivision, a single sign may be placed on streets that are major entry points where the statutory or posted speed limit is 35 mph or less, beyond but not within 200 feet of, the posted speed limit sign.</p> <p>At the major approach(s) to a residential development not within or part of a subdivision where there is 1/3 mile or more of residential development (either side of roadway) with direct frontage/access and where the speed limit has been reduced to 35 mph or less; a single sign may be installed beyond but not within 200 feet from, the (reduced) post speed limit sign.</p> <p>As generally outlined in the latest edition of MUTCD.</p> <p>Signs shall not be installed where indicated as follows:</p> <ul style="list-style-type: none"> <li>• On any roadway where the speed limit exceeds 35 mph</li> <li>• In lieu of a standard Playground sign (W15-1), used to warn motorists of a designated playground</li> <li>• At a location where School warning signs are in place - in combination (same pole) with any other regulatory or warning signs - preceding any existing regulatory or warning signs</li> <li>• Closer than 200 feet to any existing regulatory or warning signs</li> </ul> <p>Should VDOT determine that another regulatory or warning sign must be placed such that it would violate the rules above, the VDOT sign will take priority and the Watch for Children sign will be relocated by the county/town at its expense.</p>



## F: TOOL IMPLEMENTATION CRITERIA – ROCKVILLE, MARYLAND

## Cut-through and/or Traffic Calming Tool Implementation Criteria – Rockville, Maryland

Source: Guidelines for Neighborhood Traffic Management, City of Rockville

### Residential Traffic Diversion Plans

Secondary residential streets	Primary residential class II streets
Minimum 2,000 vehicles per day in both directions, or	Minimum 5,000 vehicles per day in both directions, or
Minimum 200 vehicles in any hour in both directions, or	Minimum 500 vehicles in any hour in both directions, or
Minimum 150 vehicles in any hour in one direction	Minimum 375 vehicles in any hour in one direction

### Residential Speed Control Plans

Secondary residential streets	Primary residential class II streets	Primary residential class I streets
Minimum 500 vehicles per day	Minimum 1,500 vehicles per day	Minimum 2,000 vehicles per day
85 <sup>th</sup> percentile speed exceeding the posted speed limit by at least 7 mph	85 <sup>th</sup> percentile speed exceeding the posted speed limit by at least 9 mph	85 <sup>th</sup> percentile speed exceeding the posted speed limit by at least 14 mph
Minimum segment length of 600 feet	Minimum segment length of 600 feet	Minimum segment length of 600 feet

Signature: Yon Lambert  
Yon Lambert (Jul 15, 2020 18:25 EDT)

Email: yon.lambert@alexandriava.gov



# Binder1

Final Audit Report

2020-07-15

Created:	2020-07-15
By:	Sherry Clarke (Sherry.Clarke@alexandriava.gov)
Status:	Signed
Transaction ID:	CBJCHBCAABAAAnfZ2zepe4E71yTjdPSqfX90Lg0nwyq_N

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